AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-3. (Cancelled)

4. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the thermal radiation sensor is a thermo-sensor.

5. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the thermal radiation sensor is a quantum sensor.

6. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the thermo-sensor is a pyroelectric infrared sensor for detecting infrared emitted from the ~~object to be detected~~ sensed object using a pyroelectric effect.

7. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the predetermined modeling method is an HMM (hidden Markov model).

8 -10. (Cancelled)

11. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the feature data comprises first feature data constituted by a spectrum in a frame unit of the output waveform of the thermal radiation detection unit and second feature data constituted by an average amplitude value of the spectrum in the frame unit.

12. (Original) The information recognition device according to claim 11, wherein the first feature data is obtained by transforming a value of the spectrum in the frame unit into a value of a common logarithm.

13. (Previously Presented) The information recognition device according to claim 12, wherein the feature data further comprises third feature data constituted by a difference between feature indicated by the first feature data of a selected frame and feature indicated by the first feature data of the frame immediately before the selected frame.

14. (Original) The information recognition device according to claim 13, wherein the feature data further comprises fourth feature data constituted by a difference between feature indicated by the second feature data of a selected frame and feature indicated by the second feature data of the frame immediately before the selected frame.

15. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein when the behavior pattern model is constituted by the feature data of a high dimension of four or more, the device comprises:

a feature data display unit for displaying the feature data corresponding to each behavior pattern model stored in the behavior pattern model

storage unit as a coordinate point in a two- or three-dimensional space; and

a detection result display unit for displaying a coordinate point corresponding to a detection result of the thermal radiation detection ~~means~~ unit in a space in which the coordinate point of the feature data is displayed.

16. (Currently Amended) An information recognition method, comprising:

sensing thermal radiation emitted from a sensed object;

generating an output waveform based on the sensed thermal radiation;

dividing the output waveform into a plurality of time-series frames;

calculating feature data ~~by frequency processing the time-series frames in accordance with a predetermined modeling method~~ , based on spectrums of the time-series frames;

extracting the feature data; and

storing attribute information and a behavior pattern model ~~of a target object~~ of the sensed object, wherein the attribute information of the sensed object comprises any one of:

information based on specific characteristics of a human;

information based on specific characteristics of a living creature other than a human; and

information based on specific characteristics of a non-living object; and

wherein the behavior pattern model is obtained by modeling, in accordance with a predetermined modeling method, a series of feature data calculated from spectrums of time-series frames into

which an output waveform from a thermal radiation detection unit is divided

~~comparing the feature data with the stored behavior pattern model;~~

~~calculating, based on the comparison result, a likelihood that the sensed object constitutes a target object; and~~

~~recognizing, based on the calculated likelihood, the sensed object to be a target object~~.

17. (Currently Amended) A non-transitory computer-readable storage medium tangibly embodied in a storage device storing instructions which, when executed by a processor, perform an information recognition method, comprising:

sensing, by a thermal radiation sensor, thermal radiation emitted from a sensed object, and generating an output waveform based on the sensed thermal radiation;

dividing the output waveform into a plurality of time-series frames~~, and calculating feature data by frequency processing the time-series frames in accordance with a predetermined modeling method;~~

~~recalling a stored behavior pattern model of a target object;~~

~~comparing the feature data with the stored behavior patent model;~~

~~calculating, based on the comparison result, a likelihood that the sensed object constitutes a target object; and~~

~~recognizing, based on the calculated likelihood, the sensed object to be a target object.~~;

calculating feature data, wherein the feature data is based on recognizing information from spectrums of the time-series frames;

extracting the feature data; and

storing attribute information and a behavior pattern model of the sensed object, wherein the attribute information comprises any one of:

information based on specific characteristics of a human;

information based on specific characteristics of a living creature other than a human; and

information based on specific characteristics of a non-living object;

wherein the behavior pattern model is obtained by modeling, in accordance with a predetermined modeling method, a series of feature data calculated from spectrums of time-series frames into which an output waveform from a thermal radiation detection unit is divided.

18. (Currently Amended) An alarm system, comprising:

the information recognition device according to ~~claim 1 or~~ claim 20;

a determination unit for determining whether or not the sensed object is a person based on a recognition result of the information recognition unit; and

an alarm unit for raising an alarm when the determination unit determines that the sensed object is a person.

19. (Previously Presented) An alarm system, comprising:

the information recognition device according to claim 15;

a determination unit for determining whether or not the sensed object is a person based on a recognition result of the information recognition unit; and

an alarm unit for raising an alarm when the determination unit determines that the sensed object is a person.

20. (Currently Amended) An information recognition device for recognizing attribute information of a sensed object within a detection range, comprising:

a thermal radiation detection unit for detecting, by a thermal radiation sensor, thermal radiation emitted from [a] the sensed object;

a signal processor for dividing an output waveform acquired from the thermal radiation detection unit into a plurality of time-series frames, ~~and~~ calculating feature data for recognizing information from ~~a result of frequency processing~~ spectrums of ~~each of~~ the ~~plurality of~~ time-series frames;

a behavior pattern model storage unit for storing attribute information and a behavior pattern model associated with the sensed object, wherein the attribute information comprises any one of:

information based on specific characteristics of a human;

information based on specific characteristics of a living creature other than a human; and

information based on specific characteristics of a non-living object; and

the behavior pattern model being obtained by modeling, in accordance with a predetermined modeling method, a ~~behavior pattern of the sensed object, by using~~ series of feature data calculated from a ~~result of frequency processing~~ spectrums of ~~each of the plurality of~~ time-series frames into which an output waveform from ~~another~~ a thermal radiation detection unit is divided; and

an information recognition unit for calculating a likelihood ~~that the sensed object represented by the feature data calculated by the signal processor constitutes an object represented by the behavior pattern model stored in the behavior pattern model storage unit, and recognizing, based on the calculated likelihood, the sensed object to be the object represented by the behavior pattern model stored in the behavior pattern model storage unit~~ between the calculated feature data and the stored behavior pattern model, and recognizing the sensed object based upon the calculated likelihood.

21. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the signal processor divides a single output waveform acquired from the thermal radiation detection unit into the plurality of time-series frames.

22. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the signal processor divides at least one single output waveform acquired from the thermal radiation detection unit into the plurality of time-series frames.

23. (Currently Amended) The information recognition device according to ~~claim 1 or~~ claim 20, wherein the feature data is calculated from a spectrum of the output waveform of each of the plurality of time-series frames.